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Journal of Theoretical and Applied Information Technology
Volume 95, Issue 22, 30 November 2017, Pages 6089-6098

Open Access

Multiset controlled grammars (Article)

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Abstract

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This study focusses on defining a new variant of regulated grammars called multiset controlled grammars as well as investigating their computational power. In general, a multiset controlled grammar is a grammar equipped with an arithmetic expression over multisets terminals where to every production in the grammar a multiset is assigned, which represents the number of the occurrences of terminals on the right-hand side of the production. Then a derivation in the grammar is said to be successful if only if its multiset value satisfies a certain relational condition. In the study, we have found that control by multisets is powerful tool and yet a simple method in regulation of generative processes in grammars. We have shown that multiset controlled grammars are at least as powerful as additive valence grammars, and they are at most powerful as matrix grammars. © 2005 – ongoing JATIT & LLS.

Author keywords

Context-free Grammars Generative Capacity Multisets Regulated Grammars

Funding details

Funding number	Funding sponsor	Acronym
RIGS16-368-0532	International Islamic University Malaysia	IIUM

Funding text

This work has been supported through International Islamic University Malaysia Research Initiative Grant Scheme RIGS16-368-0532.

ISSN: 19928645

Source Type: Journal

Original language: English

Document Type: Article

Publisher: Asian Research Publishing Network

References (22)

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